REMARKS

Reconsideration of this application, as amended, is respectfully requested.

The specification has been amended to more accurately state the benefit claimed by the present application to U.S. provisional application provisional application Ser. No. 60/194,633, Filed Apr. 4, 2000.

Claims 7 and 13 have been cancelled. Claims 16 and 17 have been amended to obviate the indefiniteness rejection of those claims.

Claims 1 and 8 are patentable over Cafarella

Cafarella (U.S. 5,809,060) pertains to wireless local-area networks and means to provide data communications over a radio communications channel corrupted by multipath interference. Cafarella, abstract. Cafarella fails to teach or suggest diversity-encoding of either a spread information signal or a despreading signal. The Office Action asserts that diversity encoding is shown in Fig. 1 of Cafarella. This assertion is wrong because Fig. 1 merely shows a schematic representation of a communications channel affected by multipath interference after transmission. Cafarella, Fig. 1 and col. 8 ll. 19-20. Cafarella fails to teach or suggest the invention as presently claimed wherein diversity-encoded spread-spectrum signals are transmitted by coupling a spread information signal and a despreading signal, at least one of which is diversity encoded, into a wireless communication channel. As a result, claims 1 and 8 and their respective dependent claims are patentable over Cafarella.

Claim 1 is patentable over Whinnett

Whinnett (U.S. 6,317,411) pertains to transmit diversity techniques using an antenna array for wireless communications systems. Whinnett, abstract. Whinnett fails to teach or suggest transmitting diversity-encoded spread spectrum signals as presently claimed where the step of diversity encoding precedes the transmission step of coupling the spread information signal and

the despreading signal into a wireless communication channel. The Office Action asserts that transmitting diversity-encoded spread spectrum signals is shown in Fig. 9 of Whinnett, which is alleged to disclose diversity encoding by means of "transmitting from a plurality of spatially separated transmitters." To reach this conclusion, the office action construes antenna selector 140 and antennas 100-106 of Whinnset to be, collectively "transmitters." Even if this were so, the conclusion that Whinnset anticipates the present invention is wrong at least because Fig. 9 reflects a scheme wherein signals are coupled into a wireless communication channel (at upconverter 96, for example) before diversity encoding. In contrast, in the present invention, diversity encoding precedes this step. This enables separate application of diversity codes to any one or more of spread information and despreading signals. In contrast, the scheme of Whinnett, even if it provides diversity encoding, does so only after all the signals are coupled into the wireless communication channel. As a result, claim 1 and its dependent claims are patentable over Whinnett.

Claims 1 and 8 are patentable over Weerackody

Weerackody (U.S. 5,289,499) is concerned with mitigating the effects of fading due to multipath effects in a direct sequence spread spectrum system. Weerackody, col. 2, ll. 47-49. Weerackody fails to teach or suggest transmitting diversity-encoded spread spectrum signals as presently claimed where the step of diversity encoding precedes coupling the spread information signal and the despreading signal. The Office Action asserts that transmitting diversity-encoded spread spectrum signals is shown in Fig. 4 of Weerackody which is alleged to disclose diversity encoding by means of "transmitting from a plurality of spatially separated transmitters." Even if this were so, the conclusion that Weerackody anticipates the present invention is wrong at least because Fig. 4 reflects a scheme wherein a spread information signal and a despreading signal are combined before diversity encoding. In other words, to the extent Weerackody discloses diversity encoding at all, it discloses diversity encoding only of the combined signal. In contrast, in the present invention, diversity encoding of at least one of the spread information signal and the despreading signal precedes the combining step. This enables separate application of diversity codes to any one or more of spread information and despreading signals. As a result, claims 1 and 8 and their respective dependent claims are patentable over Whinnett.

Claims 16 and 17 are patentable over Hayashi

Hayashi (U.S. 6,252,864) discloses a CDMA mobile communications base station wherein each of a plurality of different spreading codes is assigned for each communication line and a plurality of antennas each transmits signals spread with the different spreading codes. Hayashi, col. 2, ll 8-16. Hayashi fails to teach or suggest a transmitter configured for transmitting diversity-encoded spread-spectrum signals by coupling a spread information signal and a despreading signal into a wireless communication channel as presently claimed. The office action alleges that the antenna selecting section 204 and the switch connecting section 203 (Hayashi, Fig. 3) constitute the diversity processor of the present invention because they permit selection of a diversity of antennas. Even if this were so, the present invention is patentably distinct, because the apparatus of Hayashi works only on signals already coupled into a wireless communication channel, whereas the diversity processor of the present invention is configured to adjust diversity parameters of at least one of the spread information signal and the despreading signal. This enables separate application of diversity codes to any one or more of spread information and despreading signals. In contrast, the scheme of Hayashi, even if it provides diversity encoding, does so only after all the signals are coupled into the wireless communication channel. As a result, claims 16 and 17 are patentable over Hayashi.

If there are any additional fees due in connection with this communication, please charge Deposit Account No. 19-3140.

Respectfully submitted,
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